



# 40W Ku-band Maritime Thin Matchbox BUC

MTB-KUS040 // MTB-KUE040

## Field-Proven Performance

Wavestream's 40W Ku-band Maritime Thin Matchbox Block Upconverter (BUC) incorporates all of the features of Wavestream's field-proven Matchbox into a package that is designed to meet the demands of on-the-move and maritime environments.

This BUC offers unmatched efficiency and performance suitable for integration into mobile and maritime Satcom environments. Every unit is thoroughly tested to guarantee performance over the full frequency band and over the full temperature range.

## Features

- Rugged, lightweight package designed and tested for mobile and maritime environments
- Low Power Draw, High MTBF
- Holds Specs over Temperature and Frequency

## Wavestream Advantages

What sets Wavestream products apart from traditional amplifier solutions is the innovative Spatial advantEdge™ technology. This unique patented technology allows generation of higher output power in lighter, more compact product packages that use less energy and are more reliable. Wavestream's powerful solutions are designed to replace aging, less efficient amplifiers, helping system integrators get the performance they need — while reducing energy and maintenance costs over the lifecycle of the system.



## Benefits

- **Higher output power with less energy usage**
- **Proven reliability and efficiency**
- **Reduced lifecycle maintenance costs**
- **Compact footprint to meet critical space and weight limitations**



## Technical Specifications

### RF Specifications

- **Transmit Frequency:**
  - 14.0 GHz - 14.5 GHz (Standard)
  - 13.75 GHz - 14.5 GHz (Extended)
- **IF Frequency:**
  - 950 MHz - 1450 MHz (Standard)
  - 950 MHz - 1700 MHz (Extended)
- **Frequency Reference** (10 MHz on IF): 0 dBm  $\pm$  5 dB
- **Small Signal Gain:** 70 dB nominal
- **Gain Adjustment:** 30 dB in 1.0 dB steps nominal
- **Gain Variation:**
  - **Over frequency at fixed temp:** 3 dB p-p over 500 MHz
  - **Over temp at fixed frequency:** 3 dB p-p over operating range
- **Saturated Output Power:** 44.0 dBm (typical)
- **Linear Output Power:** > 43.0 dBm
  - **Intermodulation** (Third order intermodulation product relative to combined power of two carriers at 3 dB total power back-off from Linear Output Power): -25 dBc
  - **Spectral Regrowth** (For QPSK at 1.5x and OQPSK at 1.0x rate offset at 2 dB back-off from Linear Output Power): -30dBc
  - **AM / PM Conversion:** 2 deg/dB
- **Phase Noise:**
  - 10 Hz: -32 dBc/Hz
  - 100 Hz: -62 dBc/Hz
  - 1 kHz: -72 dBc/Hz
  - 10 kHz: -82 dBc/Hz
  - 100 kHz: -92 dBc/Hz
  - 1 MHz: -102 dBc/Hz
  - 10 MHz: -112 dBc/Hz
- **Noise Power Density Transmit:** -70 dBW/4 kHz (maximum)
- **Noise Power Density Receive:** -150 dBW/4 kHz (maximum)
- **Output Spurious:** -55 dBc

### Interfaces

- **IF Input Connector:** Type N Female
- **IF Input Impedance:** 50 Ohms
- **IF Input VSWR:** 2:1 maximum
- **RF Output Connector:** WR-75
- **RF Output VSWR:** 1.25:1 maximum
- **DC Connector:** 12-pin MIL Circular
- **M&C Connector:** 12-pin MIL Circular
- **M&C Protocol:** Serial RS-485 (SA-bus), Forward Power Monitor, Step Attenuator

### Power

- **DC Power:** 24V, 28V, 48V
- **DC Power Draw** (typical) (at Linear Output Power): 275W

### Physical

- **Size:** 12.8" L x 6.6" W x 3.1" H (32.5 x 16.8 x 7.9 cm)
- **Weight:** 10.6 lbs (4.8 kg)
- **Operating Temperature** (Ambient Air): -40°F to +140°F (-40°C to +60°C)
- **Relative Humidity:** 100% Condensing
- **Shock & Vibration:** MIL-STD-810E
- **Altitude:** 10,000 ft above sea level (operating)

### Base Model

- **MTB-KUE040-xx00**
- **MTB-KUS040-xx00**

## About Wavestream

Wavestream sets the standard in the design and manufacture of next generation high power solid state amplifiers. Wavestream's Family of Ka, Ku, X and C-band Solid State Power Amplifiers (SSPAs) and Block Upconverters (BUCs) provide systems integrators with field-proven, high performance solutions designed for mobile and fixed defense and broadcast satellite communication systems worldwide.

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